

Atty. Docket No. 391130

### REMARKS

Claims 1, 3, 4, 6-33, 62 and 73-88 remain pending in the instant application. Claim 1 has been amended to incorporate the subject matter of claims 2 and 5, which are presently cancelled. Claim 21 is amended to correct an obvious typographical error. No new matter has been added by these amendments.

#### Claim Rejections – 35 USC § 103

Claims 1, 4, 7, 10-11, 20-23, 29, 62, 73, 74, 86 and 88 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 6,501,773 granted to Volz et al. (hereinafter "Volz").

The following is a quotation from the MPEP setting forth the three basic criteria that must be met to establish a *prima facie* case of obviousness:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the references or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2142, citing *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Volz discloses a laser array module in which the wavelength and power of the transmitted light may be monitored and controlled. The laser module configuration uses an optical switch to send 5-10% of a laser's output to a beam splitter within a feedback loop. Part of the beam is sent directly to a first photodetector as a reference, while the other part is sent to a wavelength locking mechanism where it is filtered before being sent to a second photodetector. A digital signal processor (DSP) compares the two portions of the beam to determine wavelength, power level, and signal modulation (col. 2, lines 53-65; col. 3, line 58 through col. 4, line 3). The DSP then sends instructions to a laser control module to adjust the laser based on the results of the comparison.

In contrast, amended claim 1 of the instant application recites an improvement to an optical test system, including:

- (a) a housing that contains at least eighteen laser source channels,

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(b) wherein the optical test system has a volumetric density of greater than 9.5 laser source channels per cubic foot, and

(c) a master controller internal to the housing operable for control of the laser source channels, the master controller having a common interface for commanding the laser source channels.

Volz fails to disclose, at least, elements (a) and (b) of claim 1. Specifically, Volz fails to disclose a housing that contains at least eighteen laser source channels and the optical test system has a volumetric density of greater than 9.5 laser source channels per cubic foot. The Examiner states that because Volz uses the labeling "LASER 1 – LASER N" in FIG. 1 it would have been obvious to use eighteen or more laser source channels. Respectfully, we disagree. The present application states: "To date, no manufacturer has been able to offer an optical source array in the confines of a single integrated box containing more than about seventeen laser sources within the box. Within boxes formed to meet these restrictions the number of laser sources are primarily limited by the size of the electronic and optical assemblies required, and by heat dissipation requirements" (p. 3, line 21 through p. 4, line 2). It is not obvious to provide more laser source channels than may practically be utilized in a traditional optical test system. Element (b) contains subject-matter from former claims 2 and 5, which the Examiner has deemed allowable.

Volz fails to disclose every element of Applicants' claim 1 and, for at least this reason, Volz fails to render claim 1, or any claims dependent thereon, obvious. Reconsideration and allowance of claim 1 is respectfully requested.

Claims 4, 7, 10-11, 20-23, 29, 62, 73, 74, 86 and 88 depend from claim 1 and benefit from arguments presented above. Further, these claims have additional features that patentably distinguish over Volz. For example, claim 4 recites the optical test system includes at least forty eight of the laser source channels internal to the housing. Claim 7 recites the optical test system includes at least one hundred of the laser source channels internal to the housing. As argued above, it is not obvious to provide more laser source channels than may practically be utilized in a traditional optical test system. Claim 21 recites the modulation controller is capable of generating a plurality of waveforms for one or more channels. Claim 22 recites the waveforms are selected to include at least two members of the group consisting of square waves, sawtooth waves, and sine waves. Volz does not disclose multiple waveforms; it discloses only that "...the amplitude dither may modulate the light of individually selected lasers in a *sinusoid* pattern..." (col. 5, lines 7-9). Claim 23 recites a laser source card programmably configurable to operate a

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switch accepting a selected one of the waveforms. Claim 86 recites the switch accepts a selected one of the waveforms as drive input for the laser source. Volz does not disclose multiple waveforms, or a laser source card programmably configurable to operate a switch. In Volz, electronic controller 114, not laser source card 102, operates switching mechanism 108 (see FIG. 1). Claim 29 recites a data input device capable of reprogramming the optical test system with software upgrades. Claim 88 recites the software upgrades being executable through use of a telecommunications linkage. Volz does not disclose a data input device capable of reprogramming the optical test system with software upgrades, or a telecommunications linkage.

Reconsideration and allowance of claims 4, 7, 10-11, 20-23, 29, 62, 73, 74, 86 and 88 is respectfully requested.

Claims 24-27 and 87 stand rejected under 35 USC §103(a) as being unpatentable over Volz in view of U.S. Patent No. 6,446,867 granted to Sanchez (hereinafter "Sanchez").

Sanchez discloses an electro-optic interface system configured to optically communicate signals between two or more electronic systems (e.g., computers). The electronic systems are linked by a fiber optic cable having housings containing the interface systems on either end (FIG. 7). The housings connect to electronic systems, such as PCs, Internet servers and computer peripherals, through USB connectors.

Sanchez does not disclose an optical test system for a laser source bank, and is therefore nonanalogous art. Further, claims 24-27 and 87 depend from claim 1, which Applicants have argued is allowable. For at least these reasons, claims 24-27 and 87 should be allowable; however these claims include additional elements that patentably distinguish over Volz in view of Sanchez.

For example, claim 24 recites the laser source card includes a gain block that is programmably configurable to adjust an amplitude of the waveforms. Neither Volz nor Sanchez disclose that a laser source card includes a gain block. Instead, Volz discloses an amplitude dither within DSP 112, not laser 102, and Sanchez discloses a laser driver/amplifier 242, within a driver/amplifier assembly 240, that is separate from laser module 250 (col. 8, lines 36-39; FIG. 1B; FIG 2A). Claim 27 recites the master controller is operable for troubleshooting operations on the optical test system. Neither Volz nor Sanchez disclose that a master controller is operable for troubleshooting operations on the optical test system. As argued above, Sanchez does not disclose an optical test system. Claim 87 recites the laser source card includes a bypass mechanism that is

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programmably configurable to bypass the gain block. Neither Volz nor Sanchez disclose a bypass mechanism for bypassing the gain block; particularly, a bypass mechanism included in a laser source card.

Volz and Sanchez, alone or in combination, fail to disclose every element of Applicants' claims 24-27 and 87. For at least this reason, Volz and Sanchez fail to render these claims obvious. Reconsideration and allowance of claims 24-27 and 87 is respectfully requested.

**Allowable Subject Matter**

We thank the Examiner for recognizing the allowable subject matter recited in claims 2, 3, 5-6, 8-9, 12, 13, 14-19, 30-33, and 75-85. We additionally note that claim 28 has not been addressed by either of the Examiner's rejections. Applicants submit that there are further reasons for allowance of these and all other claims not specifically referenced in the Office Action of October 19, 2005, or in the remarks contained herein.

In view of the above Remarks, Applicants have addressed all issues raised in the Office Action dated October 19, 2005, and respectfully solicit a Notice of Allowance. Should any issues remain, the Examiner is encouraged to telephone the undersigned attorney.

Applicant believes no fees are currently due in connection with this Response. If, however, any fee is deemed necessary in connection with this Response, please charge Deposit Account No. 12-0600.

Respectfully submitted,

1/19/06  
Date

Shireen Marshall  
Shireen Marshall, Reg. No. 54,295  
Lathrop & Gage, L.C.  
4845 Pearl East Circle, Suite 300  
Boulder, CO 80301  
Telephone: (720) 931-3031  
Facsimile: (720) 931-3001

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